

IN THE CLAIMS:

The status of each claim that has been introduced in the above-referenced application is identified in the ensuing listing of the claims. This listing of the claims replaces all previously submitted claims listings.

1. (Currently amended) A precursor to a semiconductor device structure, comprising:
a semiconductor device layered structure comprising a semiconductor substrate;
a buffer film layer located over at least a portion of saidthe semiconductor substrate;
at least one trench formed in saidthe semiconductor device layered structure; and
at least one shallow trench isolation structure positioned at least partially within saidthe at least
one trench and including:
a substantially flat surface; and
an integral ledge which extends laterally outward from saidthe at least one trench
so as to contact only an area of an active surface of saidthe semiconductor
substrate adjacent saidthe at least one trench.
2. (Currently amended) The precursor of claim 1, wherein saidthe buffer film layer
comprises substantially oxidation resistant material.
3. (Currently amended) The precursor of claim 2, wherein saidthe substantially
oxidation resistant material is selectively etchable.
4. (Currently amended) The precursor of claim 1, wherein a lateral edge of saidthe
integral ledge contacts saidthe buffer film layer.
5. (Currently amended) The precursor of claim 1, wherein saidthe at least one shallow
trench isolation structure comprises densified material.

6. (Currently amended) The precursor of claim 1, wherein saidthe buffer film layer comprises silicon nitride.

7. (Currently amended) An intermediate semiconductor device structure, comprising:
a semiconductor substrate including at least one trench formed therein and at least one trench corner located at a juncture between saidthe at least one trench and an active surface of saidthe semiconductor substrate; and
a buffer film layer over at least portions of saidthe active surface; and
at least one densified trench isolation structure including a substantially flat surface exposed through saidthe buffer film layer, saidthe at least one trench corner being covered by saidthe at least one densified trench isolation structure.

8. (Currently amended) The intermediate semiconductor device structure of claim 7, wherein saidthe buffer film layer comprises a substantially oxidation resistant material

9. (Currently amended) The intermediate semiconductor device structure of claim 7, further comprising:
a layer comprising silicon oxide disposed within saidthe at least one trench and between saidthe semiconductor substrate and saidthe buffer film layer.

10. (Currently amended) The intermediate semiconductor device structure of claim 9, wherein saidthe layer comprises densified silicon dioxide.

11. (Currently amended) The intermediate semiconductor device structure of claim 7, wherein saidthe at least one densified trench isolation structure comprises densified material.

12. (Currently amended) The intermediate semiconductor device structure of claim 7, wherein saidthe buffer film layer comprises silicon nitride.

13. (Currently amended) An intermediate semiconductor device structure, comprising:
a semiconductor substrate including at least one trench formed therein and at least one trench
corner located at a juncture between saidthe at least one trench and an active surface of
saidthe semiconductor substrate; and
at least one trench isolation structure including a substantially flat surface, saidthe at least one
trench isolation structure extending laterally only over and contacting only a portion of
saidthe active surface adjacent saidthe at least one trench corner so as to electrically
isolate saidthe at least one trench corner.

14. (Currently amended) The intermediate semiconductor device structure of claim 13,
wherein saidthe at least one trench isolation structure comprises densified silicon dioxide.

15. (Canceled)

16. (Currently amended) The intermediate semiconductor device structure of claim 15,
wherein saidthe silicon oxide layer comprises densified silicon dioxide.

17. (Currently amended) The intermediate semiconductor device structure of claim 13,
wherein saidthe buffer film layer comprises silicon nitride.

18. (Currently amended) A precursor to a semiconductor device structure, comprising:
a semiconductor substrate;
at least one trench formed in saidthe semiconductor substrate;
a buffer film layer over an active surface of saidthe semiconductor substrate;
and at least one shallow trench isolation structure at least partially within saidthe at least one
trench and exposed through saidthe buffer film layer, saidthe at least one shallow trench
isolation structure including at least one integral ledge extending laterally outward from
saidthe at least one trench so as to contact an area of saidthe active surface adjacent
saidthe at least one trench.

19. (Currently amended) The precursor of claim 18, wherein saidthe at least one shallow trench isolation structure includes a substantially planar surface.

20. (Currently amended) The precursor of claim 18, wherein saidthe at least one shallow trench isolation structure comprises densified silicon oxide.

21. (Currently amended) The precursor of claim 18, wherein saidthe buffer film layer comprises silicon nitride.

22. (Currently amended) The precursor of claim 18, wherein saidthe buffer film layer comprises densified material.

23. (Currently amended) The precursor of claim 18, wherein saidthe buffer film layer comprises substantially oxidation resistant material.

24. (Currently amended) The precursor of claim 23, wherein saidthe substantially oxidation resistant material is selectively etchable.